

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2012-0113
AMENDING WASTE DISCHARGE REQUIREMENTS
ORDER R5-2008-0006 (NPDES PERMIT NO. CA0082660)

CITY OF BRENTWOOD
WASTEWATER TREATMENT PLANT
CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Central Valley Water Board) finds that:

1. On 25 January 2008, the Central Valley Water Board adopted Waste Discharge Requirements Order R5-2008-0006 (NPDES Permit) and Cease and Desist Order R5-2008-0007 (CDO), prescribing waste discharge requirements and compliance time schedules for the City of Brentwood Wastewater Treatment Plant, Contra Costa County. For the purposes of this Order, the City of Brentwood is hereafter referred to as "Discharger" and the Wastewater Treatment Plant is hereafter referred to as "Facility".
2. The Discharger owns and operates the Facility. The treatment system consists of a headworks (screening and grit removal), oxidation ditches and denitrification basins providing biological treatment, secondary clarification, tertiary filtration, chlorine disinfection, dechlorination, and a cascade aeration system. The Facility discharges tertiary treated effluent to Marsh Creek, a water of the United States. Occasionally, the Discharger will use on-site percolation ponds for land disposal of undisinfected secondary treated effluent.
3. The NPDES Permit contains, in part, Final Effluent Limitations for chloride in section IV.A.1.a as an average monthly of 226 mg/L and a maximum daily of 246 mg/L. The final effluent limitations for chloride become applicable to the waste discharge on 1 January 2013, because a compliance schedule is provided in the NPDES Permit.

The NPDES Permit expires on 31 December 2012 and the Discharger submitted a Report of Waste Discharge for permit renewal. Since the Discharger submitted a timely application for renewal, the NPDES Permit will continue in effect until the permit is renewed. The Central Valley Water Board staff anticipates renewal of the permit in early 2013, and the final effluent limits for chloride may change in the renewed permit.

4. The Discharger has been making diligent progress to comply with the final effluent limitations for chloride. The Discharger implemented a pollution prevention plan (PPP) for chloride (March 2011). As part of the PPP implementation the Discharger has completed the following tasks:
 - a. **Alternative chloride criteria to derive effluent limitations** (October 2011). For the 2008 permit, the derivation of the water quality-based effluent limits for chloride was based on the interpretation of the Basin Plan's narrative toxicity objective. Using its judgment the Central Valley Water Board utilized United States

Environmental Protection Agency (USEPA) 1988 National Recommended Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life for Chloride to interpret the narrative toxicity objective. The Discharger researched potential alternative water quality criteria for chloride that have been developed by other states to determine if more recent water quality criteria have been developed that may appropriately be used to interpret the narrative toxicity objective for the specific receiving water body. In particular, the state of Iowa, in coordination with the USEPA, developed and adopted new chloride criteria in 2009 based on USEPA criteria development guidelines. Iowa's chloride criteria were derived with support from USEPA and account for the water hardness- and sulfate-dependent toxicity to chloride in sensitive aquatic organisms.¹ The Discharger has completed an evaluation of existing effluent and site-specific receiving water hardness and sulfate data, and developed preliminary conclusions that indicate alternative chloride criteria based on the equations developed by Iowa and USEPA may be more appropriate chloride criteria for protection of aquatic life. If implemented, the alternative chloride criteria of 361 mg/L would be substantially higher than the 1988 USEPA criteria of 230mg/L, which will provide the Discharger with an avenue to comply with the final limits through implementation of the proposed compliance alternative (s) described below. The Discharger is currently conducting supplemental monthly monitoring of the effluent and receiving water for hardness and sulfate to justify the potential use of the alternative criteria in the upcoming NPDES permit renewal process. The use of alternative criteria will have a substantial impact on which compliance alternative(s) need to be implemented to reduce chloride loading in the effluent.

- b. **Assimilative Capacity and Dilution Credit (April 2012)**. The Discharger completed monitoring for chloride to assess available assimilative capacity in Marsh Creek. Based on the results of the study, the available dilution flows in Marsh Creek are low and there is insufficient assimilative capacity for chloride. Therefore, a dilution credit sufficient to resolve the chloride compliance issue is not anticipated to be feasible.
- c. **Alternative Wastewater Disposal – Increased Use of Recycled Water (June 2012)**. The Discharger initiated an investigation for expanded use of recycled water to reduce or eliminate the summer discharge. A report on the implementation of this alternative is scheduled for 31 December 2016.
- d. **Chloride Loading Assessment (March 2011)**. The Discharger has completed an investigation to evaluate the sources of chloride loading into the Facility and found that the majority of the loading is from the raw influent wastewater, most likely from the use of Self-Regenerating Water Softeners (SRWS) due to the use of high hardness groundwater as the water supply. The Discharger has conducted outreach via annual water quality reports to inform the public about the hardness of

¹ "Alternative Water Quality Criteria for Chloride for the Protection of Aquatic Life," State of Iowa Department of Natural Resources (2009)

the City's water supply and promote the use of systems that regenerate the ion exchange media on demand-based control systems rather than time-based systems. The Discharger does not currently regulate water softener installation requirements through local ordinances. However, the Discharger is proposing a SRWS control program investigation that will assess the number of existing SRWS systems operating within the City boundaries. The Discharger may implement an incentive program to motivate its residents to reduce SRWS usage.

- e. **Alternative Water Supply (Ongoing)**. The Discharger has completed a preliminary investigation on water supply control options to switch from high hardness groundwater supplies to lower hardness surface water supplies. The change to surface water supplies will be needed to reduce customer reliance on water softener use in the City. The Discharger has begun to change water supplies, reducing groundwater usage from 60 percent of the total supply prior to 2007 to 35 percent of the total supply in 2012.

The Discharger submitted an Infeasibility Analysis and Time Schedule Justification (May 2012) describing feasible alternatives and the process for evaluating and selecting the most appropriate alternative to comply with the final effluent limitations. As part of the Compliance Strategy Work Plan described in the Infeasibility Analysis the Discharger is proposing to: 1) investigate water supply control options; 2) investigate regulatory feasibility and cost effective alternative disposal options; and 3) develop and implement a control program for customers to minimize the use of Self-Regenerating Water Softeners.

Based on the results of the pollution prevention plan and the identified compliance strategy, more time is needed for the Discharger to comply with the final limits. Therefore, the Discharger submitted a request and justification for extending the compliance schedule an additional five years to implement compliance alternatives for chloride reduction. The request included the information required in the State Water Resources Control Board's Compliance Schedule Policy. This Order amends the NPDES Permit to extend the existing compliance schedule by five years.

5. Issuance of this Order is exempt from the provisions of the California Environmental Quality Act (Public Resources Code section 21000, et seq.), in accordance with CWC section 13389 and sections 15061(b)(3) and 15321 (a)(2), Title 14, of the California Code of Regulations.
6. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to amend the Waste Discharge Requirements Order for this discharge and has provided them with an opportunity to submit their written views and recommendations.

IT IS HEREBY ORDERED THAT:

Waste Discharge Requirements Order R5-2008-0006 (NPDES No. CA0082660) is amended solely to modify the compliance schedule for chloride. WDR Order R5-2008-0006 is amended as shown in Items 1 through 10, below. This Order is effective upon adoption.

1. Change the Order number throughout to R5-2008-0006-01.
2. **Limitations and Discharge Requirements, Section IV.A.2 – Interim Effluent Limitations.** Modify Section IV.A.2.b, as shown in underline/strikeout format below:

- b. Effective immediately and until 31 December 2012**, the Discharger shall maintain compliance with the following limitations shown in Table 8a at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the attached MRP. These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated by this provision.

Table 8a. Interim Effluent Limitations

Parameters	Units	Maximum Daily Effluent Limit
alpha-Endosulfan	µg/L	0.019
	lbs/day ¹	7.9 X 10 ⁻⁴
gamma-BHC	µg/L	0.044
	lbs/day ¹	1.8 X 10 ⁻³
Chloride	mg/L	455

¹Based on a design flow of 5.0 mgd.

Effective immediately and until 1 January 2018, the Discharger shall maintain compliance with the limitations shown in Table 8b at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the attached MRP. These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated by this provision.

Table 8b. Interim Effluent Limitations

Parameters	Units	Maximum Daily Effluent Limit
Chloride	mg/L	455

3. **Limitations and Discharge Requirements, Section VI.C.1 – Reopener Provisions.**
Add Section VI.C.1.h. as shown below in underline/strikeout format:

h. **Chloride Compliance Schedule.** This Order includes a compliance schedule for chloride with final compliance required by 1 January 2018. The compliance schedule requires submittal of a report to identify the preferred compliance alternative and an implementation schedule by 31 December 2013. This Order may be reopened for addition and/or modification of the compliance schedule interim milestone tasks based on the results of this report.

4. **Limitations and Discharge Requirements, Section VI.C.7 – Compliance Schedules.** Modify Section VI.C.7.a. as shown below in underline/strikeout format:

a. **Compliance Schedules for Final Effluent Limitations for Selenium, Chloride, 4,4'-DDT; alpha-endosulfan; and gamma-BHC.**

- i. **By 18 May 2010**, the Discharger shall comply with the final effluent limitations specified in Section IV.A.1.a. for selenium, and the interim effluent limitations specified in Section IV.A.2.c. for 4,4'-DDT. **By 1 January 2013**, the Discharger shall comply with the final effluent limitations specified in Section IV.A.1.a. for ~~chloride~~, 4,4'-DDT, alpha-endosulfan, and gamma-BHC. On 15 October 2007, the Discharger submitted a compliance schedule justification for these constituents that included all items specified in Paragraph 3, items (a) through (d), of section 2.1 of the SIP. As this compliance schedule is greater than 1 year, the Discharger shall submit annual progress reports in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.).
- ii. **Pollution Prevention Plan.** The Discharger shall prepare and implement pollution prevention plans for selenium, ~~chloride~~, 4,4'-DDT, alpha-endosulfan, and gamma-BHC in accordance with CWC section 13263.3(d)(3). The minimum requirements for the pollution prevention plans are outlined in the Fact Sheet, Attachment F, VII.B.3.c. A work plan and time schedule for preparation of the pollution prevention plans shall be completed and submitted to the Regional Water Board **within 9 months of the effective date of this Order for approval by the Executive Officer**. The Pollution Prevention Plans shall be completed and submitted to the Regional Water Board **within two (2) years following work plan approval by the Executive Officer**, and progress reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.).

iii. **Treatment Feasibility Study.** The Discharger is required to perform an engineering treatment feasibility study examining the feasibility, costs and benefits of different treatment options that may be required to remove selenium, ~~chloride~~, 4,4'-DDT, alpha-endosulfan, and gamma-BHC from the discharge. A work plan and time schedule for preparation of the treatment feasibility study shall be completed and submitted to the Regional Water Board **within 9 months of the effective date of this Order for approval by the Executive Officer.** The treatment feasibility study shall be completed and submitted to the Regional Water Board within two (2) years following work plan approval by the Executive Officer, and progress reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.).

5. **Limitations and Discharge Requirements, Section VI.C.7 – Compliance Schedules.** Add new Section VI.C.7.b. as shown below in underline/strikeout format:

b. **Compliance Schedule for Final Effluent Limitations for Chloride.**

i. **By 1 January 2018, the Discharger shall comply with the chloride final effluent limitations specified in Section IV.A.1.a. Since the time schedule for completion of actions necessary to bring the waste discharge into compliance exceeds one year, this Order includes interim effluent limitations and interim requirements and dates for their achievement.**

<u>Task</u>	<u>Date Due</u>
i. <u>Submit a Pollution Prevention Plan (PPP)¹ for Chloride</u>	<u>18 March 2011</u>
ii. <u>Compliance Alternative Investigation and Selection of Preferred Compliance Alternative.</u> Submit a report that includes: 1) a compliance options investigations analysis and 2) a rationale for selection of preferred compliance option(s), and 3) a discussion of funding sources. <u>The report must also describe the selected preferred compliance alternative(s) and preliminary milestone schedule for implementing the alternative(s) for compliance with the final effluent limits for chloride.</u>	<u>31 December 2013</u>
iii. <u>Prepare Agenda Item for City Council Approval of Selected Alternative.</u> Submit a report demonstrating compliance with this task that includes the following: 1) <u>agenda item prepared that summarizes findings from the Compliance Alternative Investigation and recommended preferred compliance alternative(s).</u> 2) <u>summary of the outcome of the City Council meeting (e.g., resolution on compliance alternative options and selected preferred alternative), and</u> 3) <u>schedule for implementing the selected alternative(s).</u>	<u>30 June 2014</u>
iv. <u>Implementation of Selected Project Alternative.</u> Submit report <u>demonstrating the Discharger has begun implementing the Selected Project Alternative.</u>	<u>1 October 2014</u>

<u>Task</u>	<u>Date Due</u>
v. <u>Rate Analysis Report.</u> Submit a report that includes the following: 1) <u>identification of the funding alternatives and sources and</u> 2) <u>an evaluation of the source of rate revenue necessary to fund recommended compliance project(s) and</u> 3) <u>consider alternative funding alternatives such as revenue bonds and/or State Revolving Funds.</u>	<u>1 June 2015</u>
vi. <u>Project Funding.</u> Submit a financing plan for the selected compliance project(s) and a schedule for obtaining State Water Board funding, if applicable	<u>1 December 2015</u>
vii. <u>Final Project Milestone Schedule.</u> Submit final project milestone schedule that ensures compliance with the final effluent limits for chloride by the final compliance date.	<u>1 February 2016</u>
viii. <u>Implementation of Expanded Recycled Water Usage.</u> Submit report that describes the implementation of the expanded use of recycled water to reduce discharge of treated effluent into Marsh Creek.	<u>31 December 2016</u>
-ix. <u>Progress Reports</u> ²	<u>31 December 2014</u> <u>31 December 2015</u> <u>31 December 2016</u>
x. <u>Comply with Final Effluent Limitations for Chloride.</u> Submit report demonstrating compliance with the final limits	<u>1 January 2018</u>

¹ The PPP for chloride was submitted by the compliance date. The PPP was prepared and implemented in accordance with Water Code section 13263.3(d)(3) as outlined in the Fact Sheet (Attachment F section VII.B. 3.c).

² The progress reports shall detail what steps have been implemented towards achieving compliance with waste discharge requirements, including studies, construction progress, evaluation of measures implemented, funding resources, and recommendations for additional measures as necessary to achieve full compliance by **1 January 2018**. If another report is due on the same date as a progress report, the reports can be combined into one submittal.

6. Attachment E, Monitoring and Reporting Program Section X- Other monitoring requirements. Modify Table E-11. Reporting Requirements for Special Provisions Progress Reports, as shown in underline/strikeout format below:

Table E-11. Reporting Requirements for Special Provisions Progress Reports

Special Provision	Reporting Requirements
Mercury Source Reduction Program Progress Report (Section VI.C.3.a)	1 December , annually, after approval of work plan
Salinity Source Control Program (SSCP) Annual Progress Report (Section VI.C.3.b)	1 March , annually
Compliance Schedule Compliance Progress Report for selenium; chloride ; 4,4'-DDT; alpha-endosulfan; and gamma-BHC. (Section VI.C.7.a.i)	1 June , annually, until final compliance
Pollution Prevention Plan Progress Report for selenium; chloride ; 4,4'-DDT; alpha-endosulfan; and gamma BHC. (Section VI.C.7.a.ii)	1 June , annually, after approval of work plan until final compliance

Special Provision	Reporting Requirements
Treatment Feasibility Study Progress Report for selenium; chloride ; 4,4'-DDT; alpha-endosulfan; and gamma-BHC. (Section VI.C.7.a.iii)	1 June, annually, until final compliance
<u>Compliance Schedule Progress Report for chloride (Section VI.C.7.b)</u>	31 December 2014 31 December 2015 31 December 2016

7. **Attachment F, Fact Sheet Section IV.C.3- Determining the Need for WQBELs.** Modify last paragraph of Section IV.C.3.h for chloride, as shown in underline/strikeout format below:

An interim performance-based maximum daily effluent limitation of 455 mg/L has been established in this Order. The interim limitation was determined as described in Attachment F, Section IV.E.3., and is in effect through ~~30 November 2012~~ 1 January 2018. As part of the compliance schedule, this Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final chloride effluent limitations. In addition, the Discharger shall submit an engineering treatment feasibility study and prepare and implement a pollution prevention plan that is in compliance with CWC section 13263.3(d)(3).

8. **Attachment F, Fact Sheet Section IV.E – Interim Effluent Limitations.** Modify second paragraph of Section IV.E.1 as shown in underline/strikeout format below:

The WQBELs for chloride; selenium; 4,4'-DDT; alpha-endosulfan; and gamma-BHC are based on a new interpretation of water quality objective. Therefore, a schedule for compliance with the selenium, chloride, 4,4'-DDT; alpha-endosulfan; and gamma-BHC is established in the Order. Due to the difficulty of removing chloride, ~~selenium, 4,4'-DDT, alpha-endosulfan, and gamma-BHC or establishing and implementing appropriate source control measures,~~ a compliance schedule of up to ~~5-10~~ years ~~have has~~ been established in the Order. The Discharger must achieve compliance with the final effluent limitations for ~~chloride~~; 4,4'-DDT; alpha-endosulfan; and gamma-BHC by **1 January 2013**, ~~and~~ for selenium by **17 May 2010**, and for chloride by 1 January 2018.

9. **Attachment F, Fact Sheet Section VII.B.1 – Reopener Provision.** Add Section VII.B.1.e. as shown in underline/strikeout format below:

e. **Chloride Compliance Schedule (Special Provisions VI.C.1.h).** This Order includes a compliance schedule for chloride with final compliance required by 1 January 2018. The compliance schedule requires submittal of a

Compliance Alternative Investigation report to identify the preferred compliance alternative(s) and implementation schedule by 31 December 2013. The implementation of subsequent tasks will depend on the selected preferred compliance alternative(s). Therefore, this reopener provision allows the Central Valley Water Board to reopen this Order for addition and/or modification of the specific tasks and due dates for the chloride compliance schedule (Section VI.C.7.b.i.)

10. **Attachment F, Fact Sheet Section VII.B.7 – Compliance Schedules.** Modify Section VII.B.7 as shown in underline/strikeout format below:

7. Compliance Schedules

The use and location of compliances schedules in the permit depends on the Discharger's ability to comply and the source of the applied water quality criteria.

- a. In accordance with the SIP and the Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits (Resolution 2008-0025), which is the governing Policy for compliance schedules in NPDES permits (hereafter "Compliance Schedule Policy"), the Discharger submitted a request and justification (dated October 2007), for a compliance schedule for selenium, 4,4'-DDT, alpha-endosulfan, gamma-BHC, and chloride. The compliance schedule justification included all items specified in Paragraph 3, items (a) through (d), of Section 2.1 of the SIP and Item 4 of the Compliance Schedule Policy. This Order establishes a compliance schedule for the final WQBELs for these constituents. Full compliance with the selenium WQBELs is required by 18 May 2010, while full compliance with the WQBELs for chloride, 4,4'-DDT, alpha-endosulfan, and gamma-BHC is required by 1 January 2013. The justification in the Infeasibility Analysis provides for a time schedule for the Discharger to comply with the new limitation for ~~selenium~~ chloride in five years from the effective date of this Order. Allowance of an additional compliance schedule beyond the dates specified above may be granted in a subsequent enforcement order or within the permit as appropriate, as the Regional Water Board deems necessary.
- b. Since the adoption of WDR Order R5 2008-0006 the discharger implemented a pollution prevention plan for chloride (March 2011) that identified possible alternatives to control chloride in order to comply with the final effluent limitations. The Discharger submitted an infeasibility analysis (June 2012) that included a Compliance Strategy Work Plan to: 1) investigate water supply control options; 2) investigate regulatory feasibility and cost effective alternative disposal options; and 3) develop and implement a control program

for customers to minimize the use of Self Regenerating Water Softeners. Based on the results of pollution prevention and the identified compliance strategy, more time is needed to comply with the final limits. The infeasibility study adequately demonstrated that the Discharger cannot immediately comply with the final effluent limits for chloride, and included a request and justification for an extension of the compliance schedule for chloride that met the requirements of the Compliance Schedule Policy. This Order establishes a compliance schedule for the final WQBELs for chloride. Full compliance with the chloride WQBELs is required by 1 January 2018. Federal Regulations at 40 C.F.R. § 122.47(a)(1) requires that, “Any schedules of compliance under this section shall require compliance as soon as possible...” The Compliance Schedule Policy also requires that compliance schedules are as short as possible and may not exceed 10 years. The final compliance date is as soon as possible in accordance with federal regulations and the Compliance Schedule Policy.

Any compliance schedule contained in an NPDES permit must be “...an enforceable sequence of actions or operations leading to compliance with an effluent limitation...” per the definition of a compliance schedule in CWA Section 502(17). See also 40 C.F.R. § 122.2 (definition of schedule of compliance). The compliance schedule for chloride meets these requirements. The compliance schedule requires submittal of the Compliance Alternative Investigation report by 31 December 2013, to identify the preferred compliance alternative(s) and preliminary implementation schedule. Upon identification of the selected alternative(s), by 30 June 2014, the Discharger will develop an agenda item for consideration by the City Council of the selected compliance alternative(s) and schedule. The Discharger shall then implement the selected project alternative and submit a report by 1 October 2014. The compliance schedule also requires development of a Rate Study to identify funding alternatives and sources by 1 June 2015 and a Project Funding with a financing plan for the selected compliance project(s) by 1 December 2016. The compliance schedule also requires submit a final implementation schedule by 1 February 2016, and requires the Discharger implement expanded recycled water usage by 31 December 2016. Specific construction milestones cannot be established at this time, because the compliance alternative(s) has not been selected. Until the Discharger identifies the selected compliance alternative(s), some specific milestone tasks cannot be identified. This Order includes a reopener provision that allows the Central Valley Water Board to reopen the permit for addition and/or modification of the specific tasks and due dates for the chloride compliance schedule upon completion of the Compliance Alternative Investigation report.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with CWC section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date that this Order becomes final, except that if the thirtieth day following the date that this Order becomes final falls on a Saturday, Sunday, or state holiday (including mandatory furlough days), the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 6 December 2012.

Original Signed by

PAMELA C. CREEDON, Executive Officer